



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,480	12/22/2005	Yuqi Cai	DC8509USPCT	8170
7590 Thomas W Gorman E I du Pont de Nemours & Company Legal Patents Wilmington, DE 19898			EXAMINER SCULLY, STEVEN M	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 06/26/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/562,480

Applicant(s)

CAI ET AL.

Examiner

Steven Scully

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31, 32 and 35-56 is/are pending in the application.
- 4a) Of the above claim(s) 40-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31, 32 and 35-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

FUEL CELL COLLECTOR PLATES CONTAINING GRAFTED POLYOLEFINS

Examiner: Scully S.N.: 10/562,480 Art Unit: 1795 June 24, 2009

DETAILED ACTION

1. The Amendment filed March 19, 2009 has been entered. Claims 33-34 have been canceled and claim 31 has been amended to incorporate the subject matter of claims 33-34 therein. Accordingly, claims 31-32 and 35-39 are pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The claim rejections of claims 31-39 under 35 U.S.C. 112, second paragraph, as being indefinite are withdrawn because the claims have been amended and claims 33-34 have been canceled.

Claim Rejections - 35 USC § 102

4. Claims 31-32 and 35-39 remain rejected under 35 U.S.C. 102(b) as being anticipated by Hall (US6,059,997).

With respect to claims 31-32 and 38, Hall discloses an electrically conductive article comprising a polymer resin of modified polyolefin and conductive fillers. See

example 1. As written, the thermo plastic polymer claimed is optional. Hall discloses the grafted polyolefin is a polyolefin having a carboxylic acid or a carboxylic acid derivative grafted thereto. See column 4, lines 63-67. Hall discloses the polyolefin may be polypropylene. See column 5, lines 4-10. Hall further discloses the polyolefin is modified by a carboxylic acid or a derivative thereof. See column 5, lines 22-29. An example of a carboxylic acid is maleic acid. See column 5, lines 16-21. An example of a derivative of a carboxylic acid is a carboxylic anhydride. See column 5, lines 30-35. Therefore, Hall explicitly discloses the grafted polyolefin to be maleic anhydride grafted polypropylene.

With respect to claims 35-36, Hall discloses the carboxylic acid derivative can comprise 1% by weight of the modified polyolefin. See column 3, line 66-column 4, line 4.

With respect to claim 37, Hall discloses a composition of 108.15g of modified polyolefin and 131.85g of carbon black. See example 2.

With respect to claim 39, Hall discloses the conductive filler to be, for example, carbon powder. See column 5, lines 60-65.

Response to Arguments

5. Applicant's arguments filed March 19, 2009 have been fully considered but they are not persuasive. Applicant argues:

a) Hall does not specifically disclose either a maleic anhydride grafted polypropylene or a blend of grafted polyolefins.

The Examiner respectfully disagrees. Initially, the applicant is reminded that the claim language states "a polymer blend comprises (1) from 10 to 100 wt% of a maleic anhydride grafted polypropylene or a blend of grafted polyolefins and (2) from 0 to 90% of at least one other thermoplastic polymer having a melting point below 280°C. Therefore, the "polymer blend" of claim 1 may be 100 wt% of a maleic anhydride grafted polypropylene.

Secondly, Hall discloses a maleic anhydride grafted polypropylene. As discussed above, Hall discloses the polyolefin may be polypropylene. See column 5, lines 4-10. Hall further discloses the polyolefin is modified by a carboxylic acid or a derivative thereof. See column 5, lines 22-29. An example of a carboxylic acid is maleic acid. See column 5, lines 16-21. An example of a derivative of a carboxylic acid is a carboxylic anhydride. See column 5, lines 30-35. Therefore, Hall explicitly discloses the grafted polyolefin to be maleic anhydride grafted polypropylene.

b) Hall discloses over 100 possible modifiers one of ordinary skill would have looked to as a modifier for polypropylene.

Initially, the examiner refers the applicant to the following case law as well as MPEP § 2131.02.

When the compound is not specifically named, but instead it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can only be found if the

classes of substituents are sufficiently limited or well delineated. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990).

If one of ordinary skill in the art is able to "at once envisage" the specific compound within the generic chemical formula, the compound is anticipated. One of ordinary skill in the art must be able to draw the structural formula or write the name of each of the compounds included in the generic formula before any of the compounds can be "at once envisaged." One may look to the preferred embodiments to determine which compounds can be anticipated. *In re Petering*, 301 F.2d 676, 133 USPQ 275 (CCPA 1962).

As the MPEP further states, "In *In re Petering*, the prior art disclosed a generic chemical formula "wherein X, Y, Z, P, and R' represent either hydrogen or alkyl radicals, R a side chain containing an OH group." The court held that this formula, without more, could not anticipate a claim to 7-methyl-9-[d,l'-ribityl]-isoalloxazine because the generic formula encompassed a vast number and perhaps even an infinite number of compounds. However, the reference also disclosed preferred substituents for X, Y, Z, >P,< R, and R' as follows: where X, P, and R' are hydrogen, where Y and Z may be hydrogen or methyl, and where R is one of eight specific isoalloxazines. The court determined that this more limited generic class consisted of about 20 compounds. The limited number of compounds covered by the preferred formula in combination with the fact that the number of substituents was low at each site, the ring positions were limited, and there was a large unchanging structural nucleus, resulted in a finding that the reference sufficiently described "each of the various permutations here involved as

fully as if he had drawn each structural formula or had written each name." The claimed compound was 1 of these 20 compounds. Therefore, the reference "described" the claimed compound and the reference anticipated the claims."

With regard to the Hall reference, as applicant states, Hall discloses eighteen possibly carboxylic acid, times six possible carboxylic acid or derivatives thereof. Meaning, maleic anhydride is 1 of 108 possible combinations for modifiers. It is the position of the examiner that this is a finite amount that is sufficiently limited. However, with reference to the examples of Hall, it is noted that *examples 1 through 3 all disclose modified polyolefin comprising grafted maleic anhydride*. It is the position of the examiner that therefore the maleic anhydride is sufficiently limited to provide for anticipation of the claimed maleic anhydride grafted polypropylene because maleic anhydride has been identified as a preferred modifier and one would immediately envisage modifying the various other polyolefins disclosed by Hall with the maleic anhydride modifier.

c) Hall discloses that high density polyethylene grafted with maleic anhydride is preferred, leading one of ordinary skill to conclude that polypropylene modified with maleic anhydride may well have been considered and rejected by Hall.

It is the position of the examiner that the possibility of Hall rejecting polypropylene grafted with maleic anhydride is not sufficient basis for concluding that Hall does not anticipate the claims.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Scully whose telephone number is (571)270-5267. The examiner can normally be reached on Monday to Friday 7:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571)272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. S./
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795